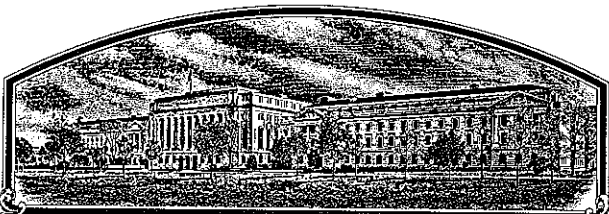


No.

8200121



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Goker's Pedigreed Seed Co.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW:

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS OF THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

OAT

'Big Mac'

In Testimony Whereof, I have hereunto set  
my hand and caused the seal of the Plant  
Variety Protection Office to be affixed  
at the City of Washington  
this 19<sup>th</sup> day of August in  
the year of our Lord one thousand nine  
hundred and eighty-two.

Attest:

*Kenneth H. Evans*  
Acting  
Commissioner  
Plant Variety Protection Office  
Grain Division  
Agricultural Marketing Service

*John R. Block*  
Secretary of Agriculture



UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED  
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY <u>Coker 76-19</u>		1b. VARIETY NAME <u>'Big Mac'</u>		FOR OFFICIAL USE ONLY PV NUMBER <b>8200121</b>	
2. KIND NAME <u>Oats</u>		3. GENUS AND SPECIES NAME <u>Avena Sativa L.</u>		FILING DATE <u>5/20/82</u>	TIME <u>11:30</u> A.M.
4. FAMILY NAME (BOTANICAL) <u>Gramineae</u>		5. DATE OF DETERMINATION <u>Aug. 1977</u>		FEE RECEIVED \$ <u>500.00</u> \$ <u>250.00</u>	DATE <u>5/20/82</u> <u>7/16/82</u>
6. NAME OF APPLICANT(S) <u>Coker's Pedigreed Seed Co.</u>		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) <u>P.O. Box 340</u> <u>Hartsville, S.C. 29550</u>		8. TELEPHONE AREA CODE AND NUMBER <u>(803) 332-7532</u>	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) <u>Corporation</u>		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION <u>South Carolina</u>		11. DATE OF INCORPORATION <u>July 12, 1918</u>	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: <u>Howard F. Harrison, Coker's Pedigreed Seed Co.</u> <u>P.O. Box 340, Hartsville, S.C. 29550</u>					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Novelty Statement.
- ☒ 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- ☒ 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.)		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <u>6/15/82</u>	
14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)			
15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)			

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☐ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

May 14, 1982  
(DATE)

Howard F. Harrison  
(SIGNATURE OF APPLICANT)

## INSTRUCTIONS

**GENERAL:** Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

### ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



7861 6T AMM  
RECEIVED

## EXHIBIT A

## Origin and Breeding History of the Variety

## 'Big Mac' (Coker 76-19)

1970 - Last Cross  $\begin{matrix} Q: \text{Coker 68-16} \times \text{Coker 69-26} \\ \times \\ P: \text{Coker 68-23} \times \text{Coker 68-26}^4 \times \text{Sg.} \times \text{P.O. 287211} \end{matrix}$  (6/15/82)

1970-71 - Field F1 Plants

Summer 1971 - Idaho F2 Bulk

1971-72 - F3 Spaced Plants

1972-73 - Field F4 Bulk from surviving plants above

1973-74 - F5 Headrow population

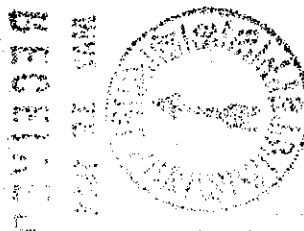
1974-75 - Replicated performance trial from single F5 Headrow

1975-76 - Single selection to increase block 76-19

'Big Mac' Coker (76-19) oats originated from a single F5 headrow, the selection of which was based on plant type, crown rust and soil-borne mosaic resistance, and relative date of maturity.

Observations of blocks of headrows in subsequent generations have revealed no apparent genetic variants. The variety is uniform and stable. (6/15/82)

Performance data have been recorded in the report of the 1977 Uniform Southern Winter Oat Nursery, a copy of which is enclosed.



## EXHIBIT B

'Big Mac'

## Novelty Statement

'Big Mac' is most similar to 'Salem', 'Coker 227', and 'Coker 716'.

'Big Mac' is similar to 'Salem' in plant tillering, leaf size and seed shape but differs in having resistance to soil-borne mosaic.<sup>1/</sup> It is similar to 'Coker 227' in seed color but differs in being resistant to soil-borne mosaic.<sup>1/</sup> It is similar to 'Coker 716' in leaf carriage and color, but differs in being resistant to crown rust.<sup>2/</sup> We believe this combination of characteristics to be unique.

6/15/82

1/. RESULTS FROM THE UNIFORM CENTRAL WINTER OAT NURSERY  
FOR 1977 page 13.

2/. RESULTS FROM THE UNIFORM CENTRAL WINTER OAT NURSERY FOR  
1978 page 14.

FORM GR-470-36  
(1-76)U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
GRAIN DIVISION  
HYATTSVILLE, MARYLAND 20782  
**OBJECTIVE DESCRIPTION OF VARIETY**

Coker's Pedigreed Seed Co.

**OAT**  
(*Avena* spp.)

NAME OF APPLICANT(S)

VARIETY NAME OR TEMPORARY DESIGNATION

P.O. Box 340

'Big Mac'

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

FOR OFFICIAL USE ONLY

Hartsville, S.C. 29550

PVPO NUMBER

8200121

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g.  or ) when number is either 99 or less.

## 1. SPECIES:

1 - SATIVA

2 - BYZANTINA

3 - OTHER (Specify) \_\_\_\_\_

## 2. GROWTH HABIT:

1 - WINTER

2 - SEMIWINTER

3 - SPRING

JUVENILE GROWTH:

1 - PROSTRATE

2 - SEMIPROSTRATE

3 - ERECT

## STANDARD VARIETIES

1 - JAYCEE

2 - CLINTLAND 64

3 - CAYUSE

4 - NORLINE

5 - YANCEY

6 - FLORIDA 501

## 3. MATURITY (50% flowering):

DAYS EARLIER THAN ..... STANDARD VARIETY

77US  
DAYS LATER THAN ..... STANDARD VARIETY

Season:

1 - VERY EARLY (Jaycee)

2 - EARLY (Nodaway 70)

3 - MIDSEASON (Clintford)

4 - LATE (Lodi)

5 - VERY LATE (Garry)

6 - EXTREMELY LATE (Mackinaw)

6/2/82 - 67 D

## 4. PLANT HEIGHT (From soil level to top of head):

CM. TALL

CM. SHORTER THAN ..... STANDARD VARIETY

CM. TALLER THAN ..... STANDARD VARIETY

77US

STANDARD VARIETY

STANDARD VARIETY

## 5. STEM:

DIAMETER:

1 - FINE (Kherson)

2 - MEDIUM (Clintford)

3 - COARSE (Nodaway 70)

HAIRINESS AT UPPER CULM NODES:

1 - HAIRLESS

2 - HAIRY

MATURE STEM COLOR:

1 - YELLOW

2 - REDDISH

## 6. LEAF: (Leaf Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the leaf color of the described variety.)

CARRIAGE: RMS 137B = DROOPING (Random) 2 = ERECT (Walken)

COLOR:

1 = YELLOW GREEN

2 = LT. GREEN

3 = DK. GREEN

4 = BLUE GREEN

MM. WIDTH (First leaf below flag leaf)

LEAF MARGIN:

1 = GLABROUS

2 = CILIATE

LIGULE:

1 = ABSENT

2 = PRESENT

LEAF SHEATH:

1 = HAIRLESS

2 = HAIRY

## 7. HEAD:

PANICLE SHAPE:

1 = EQUILATERAL

2 = INTERMEDIATE

3 = SIDE PANICLE (Unilateral)

ATTACHMENT OF LOWER WHORL OF BRANCHES:

1 = FIRST NODE

2 = SECOND NODE (False node)

PANICLE SIZE:

1 = SMALL (Yancey)

2 = MEDIUM (Walken)

3 = LARGE (Markton)

PANICLE WIDTH:

1 = NARROW (Gopher)

2 = MIDBROAD (Yancey)

3 = BROAD (Nodaway 70)

CM. PANICLE LENGTH

NUMBER OF BRANCHES

NUMBER OF WHORLS OF BRANCHES

POSITION OF BRANCHES:

1 = ASCENDING (Yancey)

2 = SPREADING (Cayuse)

3 = DROOPING (Markton)

4 = PECTINATE (White Tartar) 5 = CONFUSED (Storm King)

## 8. RACHIS:

<input type="checkbox"/> 2	1 = RECURVED (Yancey)	2 = ERECT (Walken)	<input type="checkbox"/> 2	<input type="checkbox"/> 0	MM. SECOND FLORET RACHILLA SEGMENT LENGTH
<input type="checkbox"/> 1	SECOND FLORET RACHILLA SEGMENT: 1 = HAIRLESS 2 = HAIRY		<input type="checkbox"/>	RACHILLA HAIRS: 1 = SHORT 2 = LONG	

## 9. SPIKELET:

<input type="checkbox"/> 2	SPIKELET SEPARATION BY: 1 = ABSCISSION	2 = SEMIABSCISSION	3 = FRACTURE
<input type="checkbox"/> 2	FLORET SEPARATION BY: 1 = DISARTICULATION	2 = HETEROFRACTURE	3 = BASIFRACTURE
<input type="checkbox"/> 2	<input type="checkbox"/> 0	FLORETS PER SPIKELET (mean no.)	

## 10. GLUMES: (Glume Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the color of the described variety.)

<input type="checkbox"/> 0	<input type="checkbox"/> 9	MM. WIDTH	<input type="checkbox"/> 2	<input type="checkbox"/> 0	MM. LENGTH	<input type="checkbox"/> 1	<input type="checkbox"/> 0	NO. OF VEINS ON GLUMES	<input type="checkbox"/>	COLOR: 1 = WHITE 2 = YELLOW 3 = RED 4 = STRIPED
RHS 164C										

## 11. LEMMA: (Lemma Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the color of the described variety.)

<input type="checkbox"/> 1	<input type="checkbox"/> 2	MM. LENGTH	<input type="checkbox"/>	COLOR: 1 = WHITE 2 = YELLOW 3 = RED 4 = GRAY 5 = BLACK
<input type="checkbox"/> 1	HAIRINESS OF DORSAL SURFACE: 1 = HAIRLESS 2 = HAIRY		RHS 165D	

## 12. AWN (First floret):

<input type="checkbox"/> 2	OCCURENCE: 1 = ABSENT (Walken) 2 = INFREQUENT (Yancey) 3 = COMMON (Chilocco) 4 = FREQUENT (Random)	<input type="checkbox"/> 1	TYPE: 1 = NON-TWISTED 2 = TWISTED 3 = TWISTED GENICULATE
<input type="checkbox"/> 2	<input type="checkbox"/> 0	MM. AWN LENGTH	

## 13. SEED:

<input type="checkbox"/>	FLORESCENCE UNDER ULTRAVIOLET LIGHT:	1 = FLORESCENT	2 = NON-FLORESCENT
<input type="checkbox"/> 3	BASAL HAIR: 1 = ABSENT (Florida 501) 4 = SEVERAL TO NUMEROUS (Florilee)	2 = ABSENT TO FEW (Yancey)	3 = FEW TO SEVERAL (Lee) 5 = NUMEROUS (Red Rustproof)
<input type="checkbox"/> 4	<input type="checkbox"/> 2	MM. BASAL HAIR LENGTH	
<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 4	GMS. PER 1,000 SEEDS
<input type="checkbox"/> 1	<input type="checkbox"/> 8	<input type="checkbox"/> 1	% GROAT PROTEIN
<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 1	MG. GROAT WEIGHT (each)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	% GROAT OIL

## 14. INSECTS: (0 = NOT TESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)

<input type="checkbox"/> 0	CEREAL LEAF BEETLE	<input type="checkbox"/> 0	BLUEGRASS BILLBUG	<input type="checkbox"/> 0	GRAIN BUG (C. Sayi)	<input type="checkbox"/> 0	NEMATODE (Type)
<input type="checkbox"/> 0	GREEN BUG (Biotype)	OTHER (Specify)					

## 15. DISEASE: (0 = NOT TESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)

<input type="checkbox"/> 0	HALO BLIGHT	<input type="checkbox"/> 0	POWDERY MILDEW	<input type="checkbox"/> 0	SEPTORIA LEAF BLOTCH	<input type="checkbox"/> 2	SOIL-BORNE MOSIAC
<input type="checkbox"/> 0	HELMINTHOSPORIUM LEAF BLOTCH	<input type="checkbox"/> 1	YELLOW DWARF VIRUS	<input type="checkbox"/> 2	VICTORIA BLIGHT	<input type="checkbox"/> 2	OTHER (Specify) H. Sativum

## SPECIFY RACES TESTED:

	RACES SUSCEPTIBLE	RACES RESISTANT
<input type="checkbox"/> 2 CROWN RUST.....	None Known	203, 216, 264, 294, 325, 326, None Known
<input type="checkbox"/> 1 STEM RUST.....		
<input type="checkbox"/> 0 COVERED SMUT.....		
<input type="checkbox"/> 1 LOOSE SMUT.....		

## 16. INDICATE VARIETY YOU BELIEVE MOST CLOSELY TO RESEMBLE THAT SUBMITTED:

CHARACTER	VARIETY	CHARACTER	VARIETY
PLANT TILLERING	Salem	LEAF COLOR	Coker 716
LEAF SIZE	Salem	LEAF CARRIAGE	Coker 716
SEED COLOR	Coker 227	SEED SHAPE	5

COMMENTS:

## EXHIBIT D

## 'Big Mac'

## Additional Description of the Variety

'Big Mac' is a winter oat with a semi-decumbent growth habit and midseason in maturity. It is midtall with a medium coarse stem. Panicles are intermediate in density, equilateral without a false node. Spikelets normally contain two florets, but occasionally three which separate by heterofracture. Spikelet separation is by semiabscission. Seed are rather short and plump with lemmas that average 12 mm, long without dorsal hair. Basal hairs are few to several.

'Big Mac' is resistant to soil-borne mosaic, culm rot, and the races of crown rust prevalent in the Southern U.S. during the period of development. It is susceptible to stem rust and BYDV.



TABLE 10. Miscellaneous data on varieties included in the Uniform Central Winter Oat Nursery, 1977.

Entry No.	C.I. or source No.	Clemson, SC Soil borne oat mosaic virus <sup>1</sup>	Clayton, NC Mosaic virus <sup>2</sup>	Renner, TX Stem rust <sup>3</sup>	BYDV <sup>4</sup>
1	1815	2	10	0	3.0
2	9204	4	65	0	0.5
3	9224	3	80	10 S	Tr
4	9259	6	60	15 S	0
5	9260	2	45	Tr	0.5
6	AR 99-190	7	70	5	1.0
7	TX 72C3034	8	60	0	0
8	COKER 227	6	75	0	Tr
9	COKER 76-30	2	10	Tr	Tr
10	COKER 76-16	1	15	0	2.0
11	COKER 76-19	1	10	0	1.0
12	COKER 70-16	1	15	10 S	Tr

<sup>1</sup> 0= no symptoms, 9= most severe symptoms.

<sup>2</sup> Percent plants infected.

<sup>3</sup> Number= percentages; letters= reaction type.

<sup>4</sup> Percent diseased.

TABLE 9. Miscellaneous data on varieties included in the Uniform Central Winter Oat Nursery, 1978.

Entry No.	C.I. or source No.	Clayton, NC		Rowan Co., NC		Dallas, TX		Lynan, TX			
		Crude Protein #/Acre	%	Mosaic Virus	Crude Protein #/Acre	%	Groats	BYDV <sup>2</sup>	Foliar Burn <sup>2</sup>	Crown Rust <sup>3</sup>	Stem Rust
1	1815	244.3	17.5	25	160.3	13.9	68	6.2	1.0	40 S	
2	9204	419.4	19.7	50	56.4	17.0	66	3.2	3.0	80 S	
3	9260	434.2	19.4	35	374.0	16.3	71	5.7	2.0	100 S	
4	9261	311.3	19.9	85	330.8	16.7	73	6.5	1.5	20 MS	VS
5	9302	451.3	18.6	40	289.1	14.7	70	3.0	1.5	80 VS	
6	COKER 227	397.4	21.1	30	335.9	16.2	72	6.0	1.5	Tr R	VS
7	COKER 76-30	407.2	18.4	20	334.9	14.3	74	5.2	1.0	80 S	
8	COKER 76-16	411.4	19.0	25	306.1	14.6	72	4.7	2.0	Tr R	VS
9	COKER 76-19	366.1	20.9	20	252.0	16.1	73	5.2	2.0	Tr R	VS
10	COKER 70-16	493.0	17.4	15	369.7	14.2	72	2.2	0.5	100 S	
11	COKER 74-22	462.9	20.2	40	360.1	15.4	73	5.0	0.5	Tr VR	S

1 Percent plants infected.

2 0= no symptoms, 9= most severe symptoms.

3 Numbers= percentages; letters= reaction type.

State of New York  
County of New York

TRANSFER OF OWNERSHIP.

In consideration of the formation of a research partnership, which is named CR Seeds with its principal offices at 900 Darlington Highway, Hartsville, S.C. 29550, and of which Coker's Pedigreed Seed Company, Hartsville, S.C., is a partner, Coker's Pedigreed Seed Company does hereby convey to CR Seeds, free from all encumbrances, ownership of the following protected varieties:

Wheat Varieties

<u>Variety Name</u>	<u>Plant Variety Certificate No.</u>	<u>Issue Date</u>
Coker 68-15	7200014	March 6, 1974
Coker 68-19	7200015	March 6, 1974
Coker 747	76TQ015	September 9, 1978
Coker 762	8000152	December 12, 1981
Coker 797	8000145	December 12, 1981

Oat Varieties

<u>Variety Name</u>	<u>Plant Variety Certificate No.</u>	<u>Issue Date</u>
Coker 227	7500007	October 20, 1977
Coker 716	7900003	December 28, 1978
Coker 234	7500008	October 26, 1977
Four Twenty-Two	7700085	April 12, 1979
✓ Big Mac	✓ 8200121	August 19, 1982
Mesquite	8200122	August 19, 1982

Soybean Varieties

<u>Variety Name</u>	<u>Plant Variety Certificate No.</u>	<u>Issue Date</u>
Coker-Hampton 266A	7100022	September 6, 1973
Coker 136	7300091	October 18, 1973
Coker 338	7400058	October 29, 1976
Coker 237	7800034	July 13, 1978
Coker 488	7900035	July 13, 1978
Coker 156	7900043	November 27, 1979
Coker 317	8100095	November 19, 1981
Coker 368	8200140	August 31, 1983

COKER'S PEDIGREED SEED CO.

By: E. Joe Dahmer  
E. Joe Dahmer, President

Date: February 29, 1984

Sworn and subscribed to before me  
this 29<sup>th</sup> day of February, 1984.

Ruth Silber  
Notary Public for South Carolina

RUTH SILBER  
NOTARY PUBLIC, State of New York  
No. 31-8994050  
Qualified in New York County  
Commission Expires March 30, 1984

ASSIGNMENT

WHEREAS, CR Seeds, a general partnership having its principal office at 900 Darlington Highway, Hartsville, South Carolina 29550 ("Partnership"), is the owner of the entire right, title and interest to the United States Plant Variety Protection Certificates and applications for such Certificates (collectively "Certificates") listed on Appendix A attached hereto;

WHEREAS, the partners of CR Seeds, Rohm and Haas Seeds Inc., a Delaware corporation having its principal office at Independence Mall West, Philadelphia, PA 19105 ("RHS") and Coker's Pedigreed Seed Company, a South Carolina corporation with its principal office at 900 Darlington Highway, Hartsville, SC 29550 ("CPS"), are each desirous of acquiring a one-half undivided interest in the varieties and Certificates listed on Appendix A;

NOW, THEREFOR, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, CR Seeds does hereby sell, assign and transfer to RHS a one-half undivided interest in and to the varieties and Certificates and to CPS a one-half undivided interest in and to the varieties and Certificates for each of their use and benefit and for each of their successors and assigns.

IN TESTIMONY THEREOF, CR Seeds intending to be legally bound has caused this assignment to be executed by its duly authorized officer.

CR Seeds

By: E. Joe Dahmer  
President

State of South Carolina )  
County of Darlington ) SS

On this 30th day of December, 1986, before me appeared E. Joe Dahmer of CR Seeds, the person who signed this instrument who acknowledged that he signed it as a free act on behalf of CR Seeds with authority to do so.

Logan B. Edgett  
Notary Public

My commission expires 4-14-91

APPENDIX A

Soft Red Winter Wheat Varieties

<u>Variety Name</u>	<u>U.S. Plant Variety Certificate No.</u>	<u>Issue Date</u>
Coker 68-15	7200014	Mar. 6, 1974
Coker 68-19	7200015	Mar. 6, 1974
Coker 747	76TQ015	Sept. 9, 1978
Coker 762	8000152	Dec. 12, 1981
Coker 797	8000145	Dec. 12, 1981
Coker 916	8300036	Sept. 27, 1985
Coker 983	8400058 <sup>1</sup>	Feb. 27, 1984 <sup>1</sup>
McNair 701	7200038	Feb. 26, 1974
McNair 4823	7200037	April 8, 1975
RHS 8232	8400136 <sup>1</sup>	July 16, 1984 <sup>1</sup>
9227	8600009 <sup>1</sup>	Oct. 22, 1985 <sup>1</sup>
9323	8600010 <sup>1</sup>	Oct. 22, 1985 <sup>1</sup>

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1. Application number and filing date.

Winter Oat Varieties

<u>Variety Name</u>	<u>U.S. Plant Variety Certificate No.</u>	<u>Issue Date</u>
Coker 227	7500007	Oct. 20, 1977
Coker 716	7900003	Dec. 28, 1978
Coker 820	8400059 <sup>1</sup>	Feb. 28, 1984 <sup>1</sup>
Coker 234	7500008	Oct. 26, 1977
Four Twenty Two	7700085	Apr. 12, 1979
Big Mac	8200121	Aug. 19, 1982
Mesquite	8200122	Aug. 19, 1982

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1. Application number and filing date.

Soybean Varieties

Coker Hampton 266A	7100022	Sept. 6, 1973
Coker 136	7300091	Oct. 18, 1973
Coker 338	7400058	Oct. 29, 1976
Coker 237	7800034	July 13, 1978
Coker 488	7800035	July 13, 1978
Coker 156	7900043	Nov. 27, 1979
Coker 317	8100095	Nov. 19, 1981
Coker 368	8200140	Aug. 31, 1983
Coker 425	8400077	May 31, 1985
Coker 485	8400078	May 31, 1985
Coker 393 (Q327-4270)	8400018	Jan. 25, 1985
Coker 355 (XP5878)	8400019	Jan. 25, 1985
Coker 627	8700001 <sup>1</sup>	Oct. 3, 1986 <sup>1</sup>
Coker 686	Pending <sup>1</sup>	Dec. 19, 1986

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1. Application number and filing date.

<u>Variety Name</u>	<u>U.S. Plant Variety Certificate No.</u>	<u>Issue Date</u>
AP55	8100089	Feb. 18, 1982
AP70	7800081	Feb. 15, 1979
AP71	8100090	Sept. 24, 1981
Lancer	7600044	Sept. 29, 1976
RA-526	7500067	Dec. 12, 1975
RA-604	7900008	Mar. 1, 1975
RA-680	8100097	Apr. 15, 1982
RA-502	8200160	Aug. 31, 1983
RA-606	8200161	Oct. 27, 1983
RA-580	8300075	Apr. 30, 1984
Mitchell	7300054	Oct. 30, 1974
RA-401	7800030	June 22, 1978
RA-601	7800031	June 22, 1978
Mitchell 450	7900046	June 14, 1979
RA-481	8000054	Mar. 26, 1981
RA-402	8000093	July 31, 1981
Mitchell 410	8200162	Oct. 27, 1983
RA-403	8200163	Oct. 27, 1983



<u>Variety Name</u>	<u>Certificate No.</u>	<u>Issue Date</u>
RA-451	8500008 <sup>1</sup>	Oct. 10, 1984 <sup>1</sup>
RA-452	8500009 <sup>1</sup>	Oct. 10, 1984 <sup>1</sup>
RA-405	8500010 <sup>1</sup>	Oct. 10, 1984 <sup>1</sup>
RA-501 A	76TQ006	May 11, 1978
RA-480	7900007	Feb. 15, 1979

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1. Application number and filing date.

ASSIGNMENT

WHEREAS, Rohm and Haas Seeds Inc., a Delaware corporation having its principal office at Independence Mall West, Philadelphia, PA 19105 ("RHS"), is the owner of a one-half undivided interest in and to the United States Plant Variety Protection Certificates and applications for such Certificates (collectively "Certificates") listed on Appendix A attached hereto:

WHEREAS, Coker's Pedigreed Seed Company, a South Carolina corporation with its principal office at 900 Darlington Highway, Hartsville, SC 29550 ("CPS"), is desirous of acquiring this one-half undivided interest in the aforementioned varieties and Certificates;

NOW, THEREFOR, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, RHS does hereby sell, assign and transfer to CPS RHS's one-half undivided interest in and to the varieties and Certificates for CPS's use and benefit and for its successors and assigns.

IN TESTIMONY THEREOF, RHS intending to be legally bound has caused this assignment to be executed by its duly authorized officer.

ROHM AND HAAS SEEDS INC.

By: Howard A. Mergelkamp  
Assistant Treasurer

State of Pennsylvania )  
County of Philadelphia ) SS

On this 31<sup>st</sup> day of December, 1986, before me appeared Howard A. Mergelkamp of Rohm and Haas Seeds Inc., the person who signed this instrument who acknowledged that he signed it as a free act on behalf of Rohm and Haas Seeds Inc. with authority to do so.

Elizabeth A. Smith

ELIZABETH A. SMITH, Notary Public

Notary Public, Phila., Phila. Co

My commission expires

My Commission Expires Oct. 14, 1989

8200121

ASSIGNMENT OF PLANT VARIETY PROTECTION CERTIFICATES

WHEREAS, COKER'S PEDIGREED SEED COMPANY, a South Carolina corporation ("Coker's"), having its offices at 900 Darlington Highway, Hartsville, South Carolina 29550, has adopted and used and is the sole and exclusive owner of certain United States Plant Variety Protection Certificates and similar rights under laws of countries other than the United States as listed in Exhibit A hereto:

WHEREAS, COKER'S PEDIGREED SEED CO. and NORTHRUP KING CO., a Delaware corporation ("NK"), have entered into an Asset Purchase Agreement, dated July 20, 1988, providing for the purchase and sale of substantially all of the assets and business of Coker's and the assumption of certain of Coker's liabilities and obligations by NK; and

WHEREAS, NK desires to acquire the right, title and interest in, to and under the Plant Variety Protection Certificates listed on Exhibit A hereto and the pending applications hereto (collectively, the "Plant Variety Protection Certificates").

2

### Winter Oat Varieties

<u>Variety Name</u>	<u>U.S. Plant Variety Certificate Number</u>	<u>Issue Date</u>	<u>Term (Yrs.)</u>
Coker 227	7500007	Oct. 20, 1977	17
Coker 716	7900003	Dec. 28, 1978	17
Coker 820	8400059	June 30, 1987	18
Coker 234	7500008	Oct. 26, 1977	17
Four Twenty Two	7700085	Apr. 12, 1979	17
Big Mac	8200121	Aug. 19, 1982	18
Mesquite	8200122	Aug. 19, 1982	18

### Tobacco Varieties

Coker 347	72022	Oct. 27, 1976	17
Coker 411	72023	Oct. 27, 1976	17
Coker 86	7600004	Oct. 27, 1976	17
Coker 48	7800008	Sept. 20, 1978	17
Coker 51	8100048	Feb. 18, 1982	18
Coker 176	8300056	Sept. 29, 1983	18
Coker 206	8500040	Apr. 30, 1986	18
Coker 371 Gold	8700049	Sept. 30, 1987	18

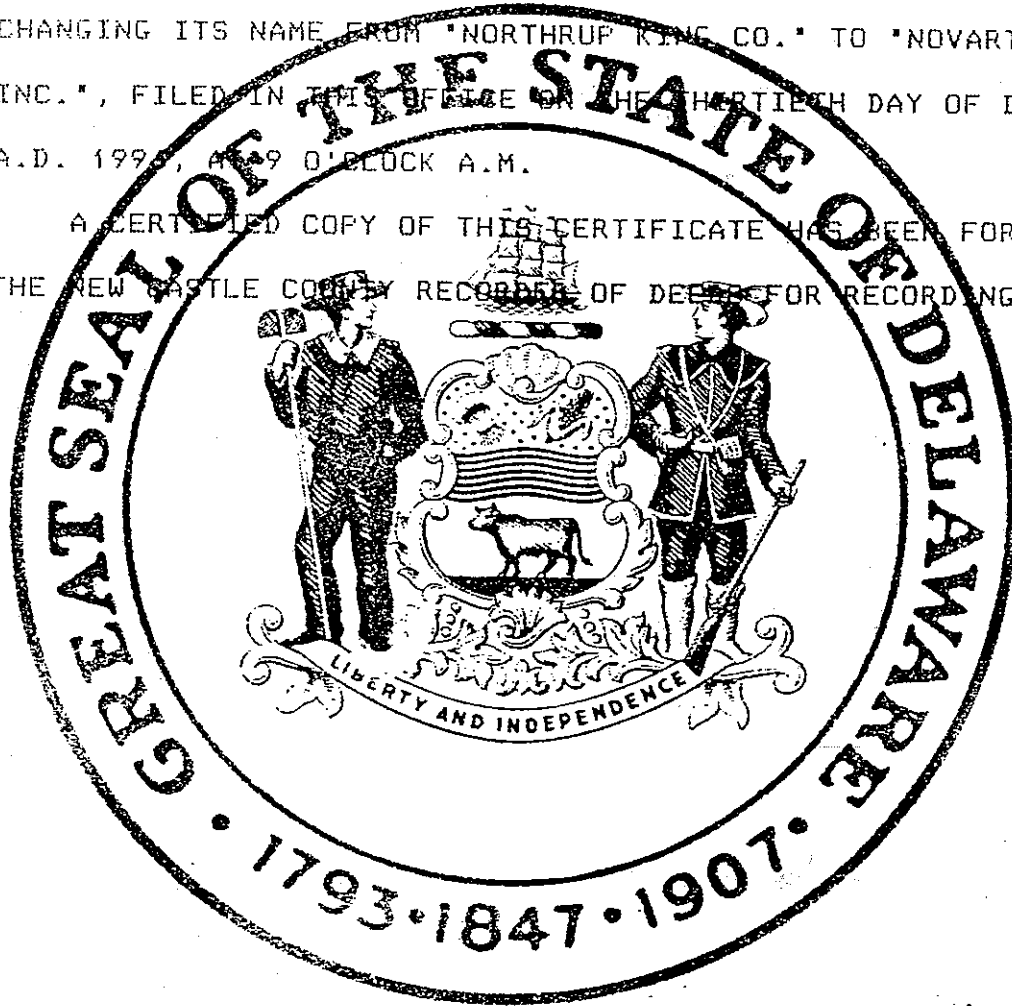
### Cotton Varieties

Coker 310	7100021	Jan. 18, 1974	17
Coker 304	7700024	Dec. 21, 1978	17
Coker 420	7900087	Jan. 29, 1980	17
Coker 315	8000087	Dec. 18, 1980	17

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "NORTHRUP KING CO.", CHANGING ITS NAME FROM "NORTHRUP KING CO." TO "NOVARTIS SEEDS, INC.", FILED IN THIS OFFICE ON THE THIRTIETH DAY OF DECEMBER, A.D. 1996, AT 9 O'CLOCK A.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.



*Edward J. Freel*

Edward J. Freel, Secretary of State

0829320 8100

960389892

AUTHENTICATION:

8267947

DATE:

12-31-96

CERTIFICATE OF AMENDMENT OF CERTIFICATE OF INCORPORATION  
OF  
NORTHROP KING CO.

It is certified that:

1. The name of the corporation (hereinafter called the "Corporation") is Northrup King Co.

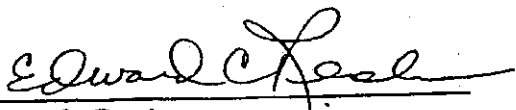
2. The Certificate of Incorporation of the Corporation is hereby amended by striking out Section 1 thereof and by substituting in lieu of said Section the following new Section.

1. The name of the Corporation is Novartis Seeds, Inc.

3. The amendment of the certificate of incorporation herein certified has been duly adopted and written consent has been given in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

4. The effective date of the amendment herein certified shall be January 1, 1997.

Signed on December 27, 1996.

  
Edward C. Resler  
Vice President & Secretary